**Dell Inc.**

**PowerEdge M640 (Intel Xeon Silver 4108, 1.80Ghz)**

### SPECspeed2017_fp_base = 50.1

### SPECspeed2017_fp_peak = Not Run

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<thead>
<tr>
<th>Threads</th>
<th>SPECspeed2017_fp_base</th>
<th>SPECspeed2017_fp_peak</th>
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<tr>
<td>603.bwaves_s</td>
<td>32</td>
<td>68.0</td>
</tr>
<tr>
<td>607.cactuBSSN_s</td>
<td>32</td>
<td>13.8</td>
</tr>
<tr>
<td>619.hmmer_s</td>
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<tr>
<td>621.wrf_s</td>
<td>32</td>
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<tr>
<td>627.cam4_s</td>
<td>32</td>
<td>35.3</td>
</tr>
<tr>
<td>628.pop2_s</td>
<td>32</td>
<td>35.1</td>
</tr>
<tr>
<td>638.imagick_s</td>
<td>32</td>
<td>37.1</td>
</tr>
<tr>
<td>644.nab_s</td>
<td>32</td>
<td>76.7</td>
</tr>
<tr>
<td>649.fotonik3d_s</td>
<td>32</td>
<td>47.9</td>
</tr>
</tbody>
</table>

#### Hardware

- **CPU Name:** Intel Xeon Silver 4108
- **Max MHz.:** 3000
- **Nominal:** 1800
- **Enabled:** 16 cores, 2 chips, 2 threads/core
- **Orderable:** 1,2 chips
- **Cache L1:** 32 KB I + 32 KB D on chip per core
- **L2:** 1 MB I+D on chip per core
- **L3:** 11 MB I+D on chip per chip
- **Other:** None
- **Memory:** 192 GB (12 x 16 GB 2Rx8 PC4-2666V-R, running at 2400)
- **Storage:** 960 GB SATA SSD
- **Other:** None

#### Software

- **OS:** SUSE Linux Enterprise Server 12 SP3 (x86_64)
- **Compiler:** C/C++: Version 18.0.0.128 of Intel C/C++ Compiler for Linux;
  Fortran: Version 18.0.0.128 of Intel Fortran Compiler for Linux
- **Parallel:** Yes
- **Firmware:** Version 1.0.0 released Aug-2017
- **File System:** btrfs
- **System State:** Run level 3 (multi-user)
- **Base Pointers:** 64-bit
- **Peak Pointers:** 64-bit
- **Other:** None
SPEC CPU2017 Floating Point Speed Result

Dell Inc.  
PowerEdge M640 (Intel Xeon Silver 4108, 1.80Ghz)

SPECspeed2017_fp_base = 50.1  
SPECspeed2017_fp_peak = Not Run

Results Table

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</tr>
</tbody>
</table>

SPECspeed2017_fp_base = 50.1  
SPECspeed2017_fp_peak = Not Run

Results appear in the order in which they were run. Bold underlined text indicates a median measurement.

Operating System Notes

Stack size set to unlimited using "ulimit -s unlimited"

General Notes

Environment variables set by runcpu before the start of the run:

KMP_AFFINITY = "granularity=fine,compact"
OMP_STACKSIZE = "192M"

Binaries compiled on a system with 1x Intel Core i7-4790 CPU + 32GB RAM
Memory using Redhat Enterprise Linux 7.4
Transparent Huge Pages enabled by default
Prior to runcpu invocation
Filesystem page cache synced and cleared with:
sync; echo 3> /proc/sys/vm/drop_caches

No: The test sponsor attests, as of date of publication, that CVE-2017-5754 (Meltdown) is mitigated in the system as tested and documented.
No: The test sponsor attests, as of date of publication, that CVE-2017-5753 (Spectre variant 1) is mitigated in the system as tested and documented.
No: The test sponsor attests, as of date of publication, that CVE-2017-5715 (Spectre variant 2) is mitigated in the system as tested and documented.

This benchmark result is intended to provide perspective on past performance using the historical hardware and/or software described on this result page.
**SPEC CPU2017 Floating Point Speed Result**

**Dell Inc.**

PowerEdge M640 (Intel Xeon Silver 4108, 1.80Ghz)  

<table>
<thead>
<tr>
<th>SPECspeed2017_fp_base</th>
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<tbody>
<tr>
<td>SPECspeed2017_fp_peak</td>
<td>Not Run</td>
</tr>
</tbody>
</table>

CPU2017 License: 55  
Test Sponsor: Dell Inc.  
Tested by: Dell Inc.

**General Notes (Continued)**

The system as described on this result page was formerly generally available. At the time of this publication, it may not be shipping, and/or may not be supported, and/or may fail to meet other tests of General Availability described in the SPEC OSG Policy document, [http://www.spec.org/osg/policy.html](http://www.spec.org/osg/policy.html)

This measured result may not be representative of the result that would be measured were this benchmark run with hardware and software available as of the publication date.

**Platform Notes**

BIOS settings:  
Virtualization Technology disabled  
System Profile set to Custom  
CPU Power Management set to Maximum Performance  
Memory Frequency set to Maximum Performance  
Turbo Boost enabled  
C States disabled  
Memory Patrol Scrub disabled  
PCI ASPM L1 Link Power Management disabled  
Sysinfo program `/root/cpu2017/bin/sysinfo`  
Rev: r5797 of 2017-06-14 96c45e4568ad54c135fd618bcc091c0f  
running on linux-8d7c Wed Nov 8 07:16:35 2017

SUT (System Under Test) info as seen by some common utilities.  
For more information on this section, see [https://www.spec.org/cpu2017/Docs/config.html#sysinfo](https://www.spec.org/cpu2017/Docs/config.html#sysinfo)

From `/proc/cpuinfo`  

```
model name : Intel(R) Xeon(R) Silver 4108 CPU @ 1.80GHz
  2 "physical id"s (chips)
  32 "processors"
cores, siblings (Caution: counting these is hw and system dependent. The following excerpts from `/proc/cpuinfo` might not be reliable. Use with caution.)
  cpu cores : 8
  siblings : 16
  physical 0: cores 0 1 2 3 4 5 6 7
  physical 1: cores 0 1 2 3 4 5 6 7
```

From `lsccpu`:  

```
Architecture: x86_64
CPU op-mode(s): 32-bit, 64-bit
Byte Order: Little Endian
CPU(s): 32
On-line CPU(s) list: 0-31
```
SPEC CPU2017 Floating Point Speed Result

Dell Inc.

PowerEdge M640 (Intel Xeon Silver 4108, 1.80Ghz)

<table>
<thead>
<tr>
<th>SPECspeed2017_fp_base</th>
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<tr>
<td>50.1</td>
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</tr>
</tbody>
</table>

CPU2017 License: 55
Test Sponsor: Dell Inc.
Test Date: Nov-2017
Hardware Availability: Sep-2017
Software Availability: Sep-2017

Thread(s) per core: 2
Core(s) per socket: 8
Socket(s): 2
NUMA node(s): 2
Vendor ID: GenuineIntel
CPU family: 6
Model: 85
Model name: Intel(R) Xeon(R) Silver 4108 CPU @ 1.80GHz
Stepping: 4
CPU MHz: 1792.460
BogoMIPS: 3584.92
Virtualization: VT-x
L1d cache: 32K
L1i cache: 32K
L2 cache: 1024K
L3 cache: 11264K
NUMA node0 CPU(s): 0,2,4,6,8,10,12,14,16,18,20,22,24,26,28,30
NUMA node1 CPU(s): 1,3,5,7,9,11,13,15,17,19,21,23,25,27,29,31
Flags:

```
fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov
pat pse36 clflush dts acpi mmx fxsr sse sse2 ss ht tm pbe syscall nx pdpe1gb rdtsscp
lm constant_tsc art arch_perfmon pebs bts rep_good nopl xtopology nonstop_tsc
aperfmpref eagerfp u pni pclmulqdq dtes64 monitor ds_cpl vmx smx est tm2 ssse3 sdbg
fma cx16 xtpmr dcm pcid dca sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes
xsave avx f16c rdrand lahf_lm abm 3dnowprefetch ida arat epbi pni pts dtherm intel_pt
tpr_shadow tuj pdcm pcid dca sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes
xsave avx f16c rdrand lahf_lm abm 3dnowprefetch ida arat epbi pni pts dtherm intel_pt
tpr_shadow tuj pdcm pcid dca sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes
xsave avx f16c rdrand lahf_lm abm 3dnowprefetch ida arat epbi pni pts dtherm intel_pt
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tpr_shadow tuj pdcm pcid dca sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes
xsave avx f16c rdrand lahf_lm abm 3dnowprefetch ida arat epbi pni pts dtherm intel_pt
tpr_shadow tuj pdcm pcid dca sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes
xsave avx f16c rdrand lahf_lm abm 3dnowprefetch ida arat epbi pni pts dtherm intel_pt
tpr_shadow tuj pdcm pcid dca sse4_1 sse4_2 x2apic movbe popcnt tsc_deadline_timer aes
```

/proc/cpuinfo cache data

cache size : 11264 KB

From numactl --hardware WARNING: a numactl 'node' might or might not correspond to a
class: physical chip.

available: 2 nodes (0-1)
node 0 cpus: 0 2 4 6 8 10 12 14 16 18 20 22 24 26 28 30
node 0 size: 96279 MB
node 0 free: 92803 MB
node 1 cpus: 1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31
node 1 size: 96736 MB
node 1 free: 95401 MB
node distances:

node 0 1
0: 10 21
1: 21 10

From /proc/meminfo

MemTotal: 197648724 kB

(Continued on next page)
Dell Inc. PowerEdge M640 (Intel Xeon Silver 4108, 1.80Ghz)

SPEC CPU2017 Floating Point Speed Result

SPECspeed2017_fp_base = 50.1
SPECspeed2017_fp_peak = Not Run

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Platform Notes (Continued)

HugePages_Total:       0
Hugepagesize:       2048 kB

From /etc/*release* /etc/*version*
SuSE-release:
  SUSE Linux Enterprise Server 12 (x86_64)
  VERSION = 12
  PATCHLEVEL = 3
  # This file is deprecated and will be removed in a future service pack or release.
  # Please check /etc/os-release for details about this release.
os-release:
  NAME="SLES"
  VERSION="12-SP3"
  VERSION_ID="12.3"
  PRETTY_NAME="SUSE Linux Enterprise Server 12 SP3"
  ID="sles"
  ANSI_COLOR="0;32"
  CPE_NAME="cpe:/o:suse:sles:12:sp3"

uname -a:
  Linux linux-8d7c 4.4.70-2-default #1 SMP Wed Jun 7 15:12:06 UTC 2017 (4502c76) x86_64
  x86_64 x86_64 GNU/Linux

run-level 3 Nov 8 03:53

SPEC is set to: /root/cpu2017
  Filesystem   Type  Size  Used Avail Use% Mounted on
  /dev/sda3    btrfs  855G  28G  828G   4% /

Additional information from dmidecode follows. WARNING: Use caution when you interpret this section. The 'dmidecode' program reads system data which is "intended to allow hardware to be accurately determined", but the intent may not be met, as there are frequent changes to hardware, firmware, and the "DMTF SMBIOS" standard.

BIOS Dell Inc. 1.0.0 08/10/2017
Memory:
  12x 00AD00B300AD HMA82GR7AFR8N-VK 16 GB 2 rank 2666, configured at 2400
  4x Not Specified Not Specified

(End of data from sysinfo program)

Compiler Version Notes

==============================================================================
<table>
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<th>CC</th>
<th>619.lbm_s(base) 638.imagick_s(base) 644.nab_s(base)</th>
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<td>icc (ICC)</td>
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(Continued on next page)
# SPEC CPU2017 Floating Point Speed Result

**Dell Inc.**

**PowerEdge M640 (Intel Xeon Silver 4108, 1.80Ghz)**

<table>
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<tr>
<td>SPECspeed2017_fp_peak</td>
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</table>

**CPU2017 License:** 55  
**Test Sponsor:** Dell Inc.  
**Tested by:** Dell Inc.  
**Test Date:** Nov-2017  
**Hardware Availability:** Sep-2017  
**Software Availability:** Sep-2017

## Compiler Version Notes (Continued)

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**FC 607.cactuBSSN_s(base)**

icpc (ICC) 18.0.0 20170811  
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.

icc (ICC) 18.0.0 20170811  
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.

ifort (IFORT) 18.0.0 20170811  
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.

---

**FC 603.bwaves_s(base) 649.fotonik3d_s(base) 654.roms_s(base)**

ifort (IFORT) 18.0.0 20170811  
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.

---

**CC 621.wrf_s(base) 627.cam4_s(base) 628.pop2_s(base)**

ifort (IFORT) 18.0.0 20170811  
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.

icc (ICC) 18.0.0 20170811  
Copyright (C) 1985-2017 Intel Corporation. All rights reserved.

---

## Base Compiler Invocation

**C benchmarks:**

icc

**Fortran benchmarks:**

ifort

**Benchmarks using both Fortran and C:**

ifort icc

**Benchmarks using Fortran, C, and C++:**

icpc icc ifort
Dell Inc. PowerEdge M640 (Intel Xeon Silver 4108, 1.80Ghz)

SPECspeed2017_fp_base = 50.1
SPECspeed2017_fp_peak = Not Run

CPU2017 License: 55
Test Sponsor: Dell Inc.
Test Date: Nov-2017

Tested by: Dell Inc.
Hardware Availability: Sep-2017
Software Availability: Sep-2017

Base Portability Flags

603.bwaves_s: -DSPEC_LP64
607.cactuBSSN_s: -DSPEC_LP64
619.lbm_s: -DSPEC_LP64
621.wrf_s: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian
627.cam4_s: -DSPEC_LP64 -DSPEC_CASE_FLAG
628.pop2_s: -DSPEC_LP64 -DSPEC_CASE_FLAG -convert big_endian
-assume byterecl
638.imagick_s: -DSPEC_LP64
644.nab_s: -DSPEC_LP64
649.fotonik3d_s: -DSPEC_LP64
654.roms_s: -DSPEC_LP64

Base Optimization Flags

C benchmarks:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3 -qopenmp -DSPEC_OPENMP

Fortran benchmarks:
-DSPEC_OPENMP -xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch
-ffinite-math-only -qopt-mem-layout-trans=3 -qopenmp
-nostandard-realloc-lhs -align array32byte

Benchmarks using both Fortran and C:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3 -qopenmp -DSPEC_OPENMP
-nostandard-realloc-lhs -align array32byte

Benchmarks using Fortran, C, and C++:
-xCORE-AVX2 -ipo -O3 -no-prec-div -qopt-prefetch -ffinite-math-only
-qopt-mem-layout-trans=3 -qopenmp -DSPEC_OPENMP
-nostandard-realloc-lhs -align array32byte

Base Other Flags

C benchmarks:
-m64 -std=c11

Fortran benchmarks:
-m64
**Dell Inc.**

**PowerEdge M640 (Intel Xeon Silver 4108, 1.80Ghz)**

| SPECspeed2017_fp_base = | 50.1 |
| SPECspeed2017_fp_peak = | Not Run |

**CPU2017 License:** 55  
**Test Sponsor:** Dell Inc.  
**Tested by:** Dell Inc.  
**Test Date:** Nov-2017  
**Hardware Availability:** Sep-2017  
**Software Availability:** Sep-2017

### Base Other Flags (Continued)

Benchmarks using both Fortran and C:

- `m64 -std=c11`

Benchmarks using Fortran, C, and C++:

- `m64 -std=c11`

The flags files that were used to format this result can be browsed at


You can also download the XML flags sources by saving the following links:


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For questions about this result, please contact the tester. For other inquiries, please contact info@spec.org.

Tested with SPEC CPU2017 v1.0.2 on 2017-11-08 08:16:34-0500.  
Originally published on 2018-02-27.